

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 755-8370

P7610038

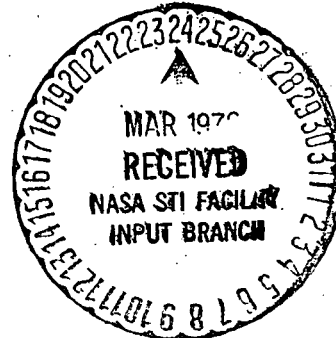
For Release Immediate

Press Kit

Project RCA-Satcom-II

RELEASE NO: 76-37

Contents



GENERAL RELEASE.....	1-4
LAUNCH OPERATIONS.....	5
STRAIGHT EIGHT DELTA FACTS AND FIGURES.....	6-7
MAJOR DELTA/RCA-SATCOM-II FLIGHT EVENTS.....	8-9
KSC LAUNCH OPERATIONS.....	10
RCA/SATCOM/DELTA/TEAM.....	10-12

(NASA-News-Release-76-37) NASA TO LAUNCH
SECOND SATCOM IN RCA SERIES (NASA) 21 p
CSCL 22D

N76-19202

Unclas
00/15 21084

NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 755-8370

Bill O'Donnell
Headquarters, Washington, D.C.
(Phone: 202/755-2354)

For Release:
Immediate

RELEASE NO: 76-37

NASA TO LAUNCH SECOND SATCOM IN RCA SERIES

NASA has scheduled launch of the RCA Corporation's second commercial domestic communications satellite on board a Delta launch vehicle from Cape Canaveral, Fla., March 25, 1976. Once in orbit it will be called RCA-Satcom-II. The launch window is from 5:48 p.m. to 6:08 p.m.

The RCA-Satcom system will consist of two satellites placed in geostationary orbits to serve the contiguous United States and Alaska with television, voice channels and high-speed data transmissions. A third satellite will be held in reserve on the ground.

RCA Global Communications, Inc. as trustee for RCA American Communications, Inc., has direct management responsibility for the system.

- more -

The first RCA Satcom spacecraft was launched successfully Dec. 12, 1975, on a Delta launch vehicle. The satellite is currently in a geosynchronous orbit at 36,000 kilometers (22,300 miles) altitude at 119 degrees W. Longitude (due south of Los Angeles) above the equator. The second spacecraft will be placed in a similar orbit at 128 degrees W. Longitude.

NASA's Goddard Space Flight Center, Greenbelt, Md., has management responsibility for the Delta launch vehicle and launch will be conducted by NASA's John F. Kennedy Space Center, Fla. All launch costs incurred by NASA, including the vehicle hardware and launch services, are reimbursed by RCA Corp.

RCA Earth stations are located near New York City, San Francisco and Los Angeles, and at Anchorage, Juneau, Nome, Bethel, Valdez and Prudhoe Bay in Alaska. Other stations are expected to be added later in Alaska and Hawaii and the contiguous United States.

The RCA Satcom spacecraft weighs 867.7 kilograms (1,913 pounds) at launch. After firing its onboard apogee motor, which places it in final synchronous orbit after separation from the Delta, Satcom will weigh 463 kg (1,021 lb.).

The satellite is box-shaped measuring 1.6 meters (5.3 feet) by 1.2 m (4.1 ft.) by 1.2 m (4.1 ft.) with two rectangular solar panels measuring 6.97 square meters (75 square feet). Silicon solar cells are continuously oriented toward the Sun and provide electric power to the satellite.

The Model 3914 Delta launch vehicle for the RCA-Satcom-II mission is a power-augmented version of the standard 2914 Delta vehicle using nine larger Thiokol Castor IV solid-propellant strap-on motors. The booster is structurally modified and the solid motor firing and dropping sequence is different. The model 3914 was first used on the RCA Satcom launch Dec. 12, 1975.

The castor IV strap-on motors are 11.1 m (36.6 ft.) in length and about 1 m (40 inches) in diameter and provide thrust of 329,200 newtons or 74,000 pounds each.

At liftoff five of the solids will fire and after burnout they will be ejected in groups of three and two. The other four then will be ignited and after burnout be ejected. This differs from the procedure on the standard 2914 vehicle where six are ignited at liftoff and after they burnout the final three are ignited and all nine ejected simultaneously.

Goddard provides in addition to Delta management, the tracking network required to accurately place RCA-Satcom in its initial transfer orbit. McDonnell Douglas Astronautics Co., Huntington Beach, Calif., is the Delta prime contractor. RCA Astro-Electronics Division built the spacecraft.

(END OF GENERAL RELEASE. BACKGROUND INFORMATION FOLLOWS.)

LAUNCH OPERATIONS

The spacecraft will be launched from Complex 17 A at Cape Canaveral, Fla., by a three-stage 3914 Delta launch vehicle.

First Stage

The first stage is a McDonnell Douglas extended long tank Thor booster incorporating nine Castor IV strap-on Thiokol solid-fuel rocket motors. The booster is powered by a Rocketdyne RS-27 engine using liquid oxygen and liquid hydrocarbon propellants. The main engine is gimbal-mounted to provide pitch and yaw control from lift to main engine cutoff (MECO). Roll control is provided by Rocketdyne liquid fueled vernier engines.

Second Stage

The second stage is powered by a TRW TR-201 liquid-fuel, pressure-fed engine that is also gimbal-mounted to provide pitch and yaw control through second-stage burn. A nitrogen gas system uses eight fixed nozzles for roll control during powered and coast flight, as well as pitch and yaw control during coast and after second-stage cutoff. Two fixed nozzles, fed by the propellant-tank, helium-pressurization system, provide retrothrust after third stage separation.

Third Stage

The third stage is the TE-364-4 spin-stabilized, solid-propellant Thiokol motor. It is secured in a spintable mounted on the second stage. The firing of eight solid-propellant rockets fixed to the spintable accomplishes spin-up of the third stage spacecraft assembly.

STRAIGHT-EIGHT DELTA FACTS AND FIGURES

The Delta has the following general characteristics:

Height: 35.4 m (116 ft.) including shroud

Maximum diameter: 2.4 m (8 ft.) without attached solids

Liftoff weight: 190,743 kg (420,516 lb.)

Liftoff thrust: 1,876,202 N (421,789 lb.) including strap-on solids

First Stage

Liquid only -- consists of an extended long tank Thor, produced by McDonnell Douglas. The RS-27 engines are produced by the Rocketdyne Division of Rockwell International. The stage has the following characteristics:

Diameter: 2.4 m (8 ft.)

Height: 21.3 m (70 ft.)

Propellants: RJ-1 kerosene as the fuel and liquid oxygen (LOX) as the oxidizer

Thrust: 912,000 N (205,000 lb.)

Burning time: About 3.48 minutes

Weight: About 93,200 kg (205,500 lb.) excluding strap-on solids

Strap-on solids consist of nine solid propellant rockets produced by the Thiokol Chemical Corp., with the following features:

Diameter: 1.016 m (40 in.)

Height: 11.1 m (36.6 ft.)

Total Weight: 97,520 kg (215,000 lb.) for nine
10,840 kg (23,900 lb.) for each

Thrust: 2,963,000 N (666,000 lb.) for nine
329,200 N (74,000 lb.) for each

Burning time: 57 seconds

Second Stage

Produced by McDonnell Douglas Astronautics Co., utilizing a TRW TR-201 rocket engine; major contractors for the vehicle inertial guidance system located on the second stage are Hamilton Standard, Teledyne and Delco.

Propellants: Liquid, consists of Aerozene 50 for the fuel and Nitrogen Tetroxide (N_2O_4) for the oxidizer

Diameter: 1.5 m (5 ft.) plus 2.4 m (8 ft.) attached ring

Height: 6.4 m (21 ft.)

Weight: 6,180 kg (13,596 lb.)

Thrust: About 42,923 N (9,650 lb.)

Total burning time: 335 seconds

Third Stage

Thiokol Chemical Co. TE-364-4 motor.

Propellants: solid

Height: 1.4 m (4.5 ft.)

Diameter: 1 m (3 ft.)

Weight: 1,160 kg (2,560 lb.)

Thrust: 61,858 N (13,900 lb.)

Burning time: 44 seconds

MAJOR DELTA/RCA-SATCOM-B FLIGHT EVENTS

Event	Time	Altitude		Velocity	
		Kilometers	Miles	Km/hr	mph
Liftoff (5 solid motors ignition)	0 sec.	0	0	0	0
Five Solid Motor Burnout	57.6 sec.	9.7	5.3	2,790	1,505
Jettison Three Solid Motor Casings	1 min. 4 sec.	12.0	6.5	2,786	1,504
Four Solid Motor Ignition	1 min. 4 sec.	12.0	6.5	2,786	1,504
Jettison Two Solid Motor Casings	1 min. 5 sec.	12.3	6.6	2,825	1,524
Four Solid Motors Burnout	2 min. 2 sec.	42.3	22.8	8,410	4,538
Jettison Four Solid Motor Casings	2 min. 7 sec.	46.1	24.9	8,691	4,690
Main Engine Cutoff (MECO)	3 min. 48 sec.	113.8	61.4	20,994	11,329
Stage II Ignition	4 min. 1 sec.	122.4	66.0	21,005	11,334
Jettison Fairing	4 min. 20 sec.	133.9	72.3	21,316	11,502
First Cutoff -- Stage II (SECO)	8 min. 17 sec.	189.0	102.0	28,063	15,143
Restart Stage II	20 min. 35 sec.	185.4	100.1	28,070	15,146
Final Cutoff -- Stage II (SECO-2)	21 min. 16 sec.	184.4	99.5	29,699	16,026

-more-

MAJOR DELTA/RCA-SATCOMB-B FLIGHT EVENTS (CONT'D.)

Event	Time	Altitude		Velocity	
		Kilometers	Miles	Km/Hr	Mph
Fire Spin Rockets	22 min. 6 sec.	183.8	99.2	29,701	16,027
Stage II/III Separation	22 min. 8 sec.	183.8	99.2	29,702	16,028
Stage III Ignition	22 min. 49 sec.	100.2	100.2	29,694	16,023
Stage III Burnout	23 min. 33 sec.	192.3	103.8	36,888	19,904
Stage III/SATCOM Separation	24 min. 46 sec.	232.6	125.5	36,756	19,834
Transfer Orbit Apogee	5 hrs. 38 min.	35,786	19,323	5,745	3,100.0

-more-

KSC LAUNCH OPERATIONS

The Kennedy Space Center's Expendable Vehicles Directorate plays a key role in the preparation and launch of the thrust-augmented Delta rocket carrying RCA Satcom II.

Delta 121 will be launched from Pad A at Complex 17, Cape Canaveral Air Force Station. This will be KSC's second mission involving the flight of a Delta with the new Castor IV solid strap-on rocket motors. RCA Satcom-I was successfully launched on a similar vehicle by KSC Dec. 12, 1975.

The Delta first stage and interstage were erected on Pad A February 3 and the second stage was mated with them February 4. The nine solid strap-on rocket motors were mounted in place around the base of the first stage beginning February 5. This operation was completed February 11.

The RCA-Satcom-II spacecraft was received in early March, checked out and mated with the Delta third stage. The third stage spacecraft assembly is to be mated with Delta March 18 and the payload fairing which will protect the spacecraft during its flight through the atmosphere is to be erected atop the vehicle March 23.

RCA/SATCOM/DELTA TEAM

NASA Headquarters

John F. Yardley

Associate Administrator
for Space Flight

William C. Schneider

Deputy Associate Administrator
for Space Flight

Joseph B. Mahon

Director of Expendable
Launch Vehicle Programs

Peter T. Eaton

Delta Program Manager

Goddard Space Flight Center

Dr. John F. Clark	Director
Dr. Robert S. Cooper	Deputy Director
Robert N. Lindley	Director of Projects
Robert Baumann	Associate Director of Projects for Delta
William A. Russell	Deputy Project Manager for Delta/Technical (Acting)
Robert Goss	Chief, Mission Integration and Analysis and NASA Project Manager for RCA- Satcom Missions
George D. Baker	Deputy Chief, Mission Integration and Analysis
Robert L. Tucker	Chief, Mission Integration
Jan A. King	Mission Integration Engineer
Tecwyn Roberts	Director of Networks
Albert Ferris	Director of Mission and Data Operations
Richard Sclafford	Network Support Manager
Raymond Mazur	Mission Support Manager
Seaton B. Norman	Communications Engineer

Kennedy Space Center

Lee R. Scherer	Director
George F. Page	Director, Expendable Vehicles

Kennedy Space Center (Cont'd.)

Hugh A. Weston, Jr.

Manager, Delta Launch
Operations

B. L. Grenville

Test Operations Manager,
Delta

David Bragdon

Spacecraft Coordinator

RCA Global Communications, Inc.

*Phillip Schneider

Executive Vice President
Satcom System, RCA Globcom

John Christopher

Director of Satcom Engi-
neering and Production

Peter Plush

Manager of Launch Vehicle
Procurement and Integration

Contractors

RCA Astro-Electronics
Division
Hightstown, N.J.

RCA Satcom Spacecraft

McDonnell Douglas Astronautics
Co.
Huntington Beach, Calif.

Delta Launch Vehicle

*(President, RCA American Communications, Inc., as soon as the
newly-formed organization becomes operational.)

For further information please contact Public Affairs
Office, RCA Global Communications, New York, N. Y.:

Erwin May or Don Quinn (212) 363-3955

